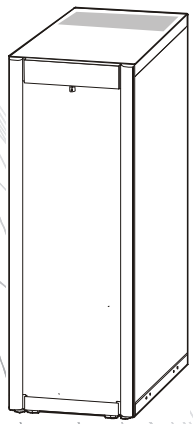
APC
by Schneider Electric

Installation

MGE ™ Galaxy™ 3500
XR Battery Enclosure

10-40 kVA 380/400/415 V
10-30 kVA 208/220 V



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Safety

IMPORTANT SAFETY INSTRUCTIONS - SAVE THESE INSTRUCTIONS

Warning:

- **ALL safety instructions in the Safety Sheet (990-2940) must be read, understood, and followed when installing the UPS system. Failure to do so could result in equipment damage, serious injury, or death.**
- **The UPS system does not have built-in disconnection devices for AC input/output and DC input. The customer must provide AC input/output over-current protection and an AC output disconnect device.**
- **After the UPS has been electrically wired, do not start it. Start-up is commissioned to authorized personnel from Schneider Electric only.**

Prepare for Floor-Anchoring (optional)

Note: If floor anchoring and battery securing is required, read this section. If not, see *"Prepare for Cables" on page 5*.

Note: Allow for enough working space behind the enclosure for electrical work to be carried out (e.g. if you want to install a conduit box or if you want to connect an XR Battery Enclosure at a later stage). Minimum rear clearance is 100 mm (3.93 in) and must comply with applicable national and local codes. 600 mm (23.6 in) is recommended.

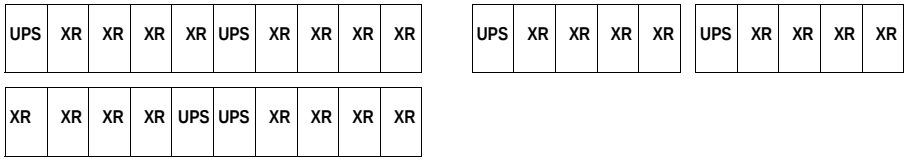
Note: The L-shaped floor anchoring brackets that secured the enclosure to the pallet during shipment may be used for a stand-alone UPS enclosure to enhance stability. See this chapter for hole positions and see also "Level the Enclosures (L-shaped Floor Anchoring Brackets) and Install Batteries" on page 20. The L-shaped floor anchoring brackets are not necessary when baying enclosures together. Instead, the three U-shaped floor anchoring brackets from the baying kit are used.

Note: Hole positions are only intended as a guide.

System arrangements

APC recommends the following arrangements of UPS units and XR Battery Enclosures (XR) in parallel.

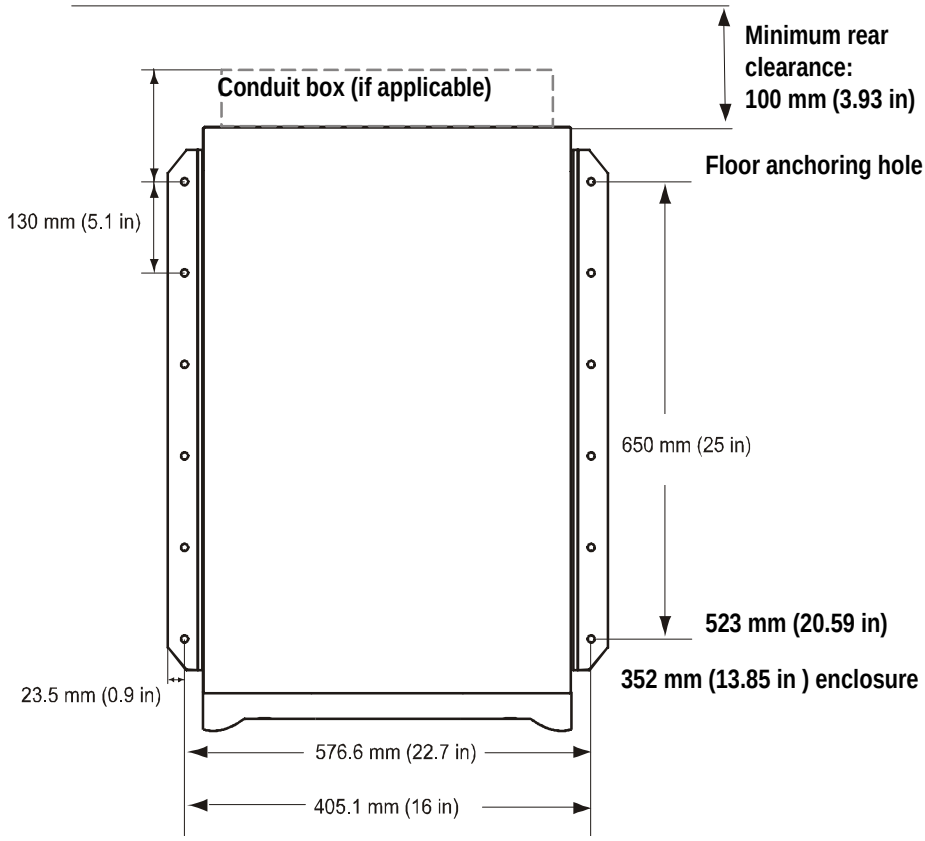
Examples with two parallel systems using baying kits.



Hole positions for a stand-alone UPS enclosure with L-shaped anchoring brackets

Note: Recommended minimum number of screws per enclosure for the L-shaped brackets is four; one in each corner. Recommended floor bolt size: M8.

Model width: 352 mm (13.85 in) and 523 mm (20.59 in).

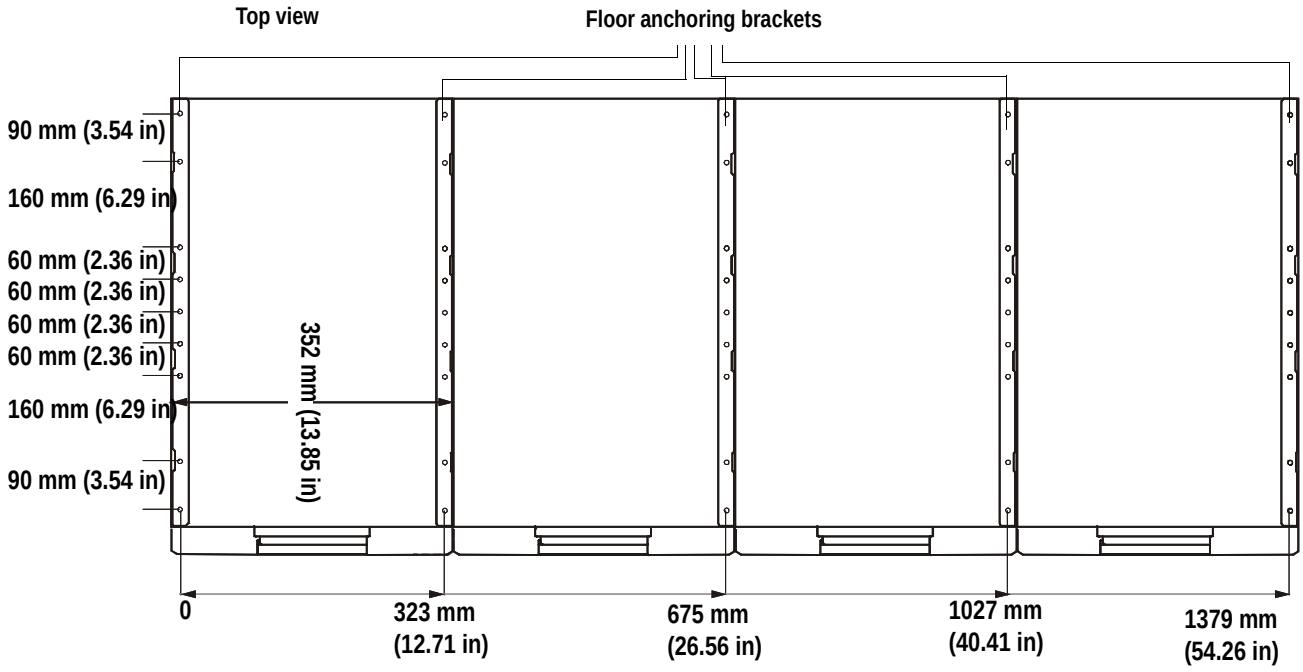

Minimum rear clearance: 100 mm (3.93 in)
Conduit box (if applicable)
Floor anchoring hole
130 mm (5.1 in)
650 mm (25 in)
523 mm (20.59 in)
352 mm (13.85 in) enclosure
23.5 mm (0.9 in)
576.6 mm (22.7 in)
405.1 mm (16 in)

Note: Rear service clearance must comply with applicable national and local codes. 600 mm (23.6 in) is recommended.

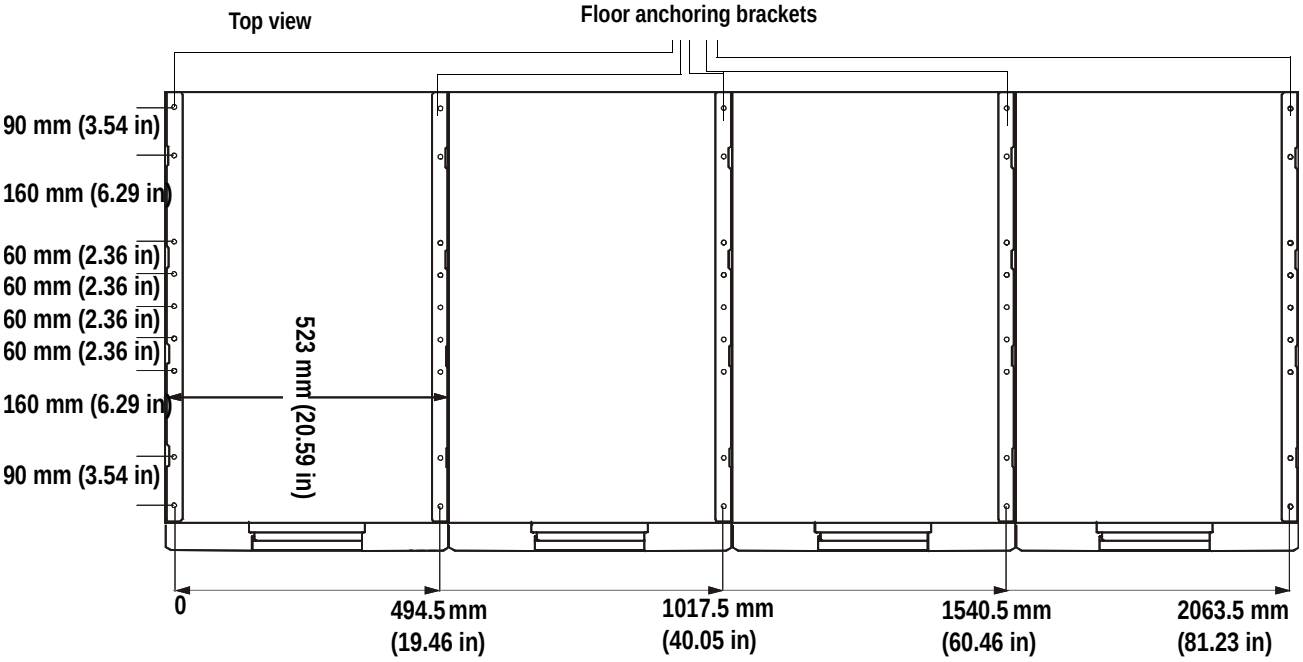
Hole positions for up to four UPS units in parallel with U-shaped anchoring brackets.

Note: Recommended minimum number of floor screws for the below two configurations is 10.

Model width: 352 mm (13.85 in).



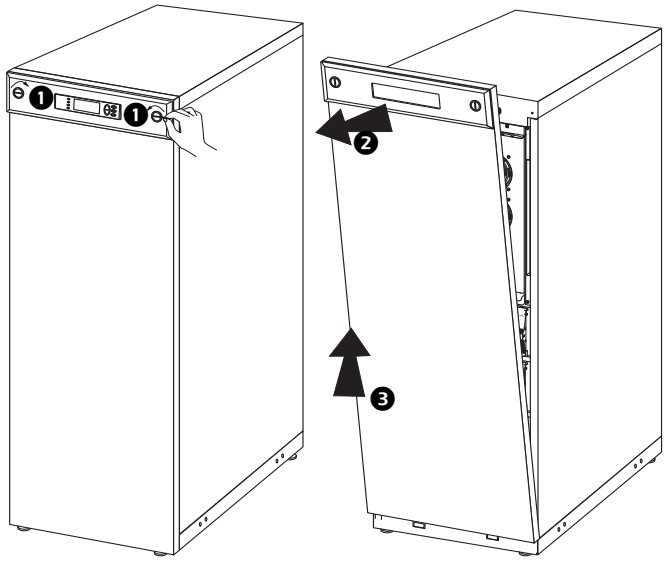
Model width: 523 mm (20.59 in).



Prepare for Cables

Remove the front panel

1. Use a coin or similar to turn the two black lock devices on either side of the display in the direction of each other to a vertical position.
2. Push the front panel upwards and pull it outwards to disengage the locking device at the top of the enclosure.
3. Lift the front panel free of the two slots at the bottom of the enclosure.

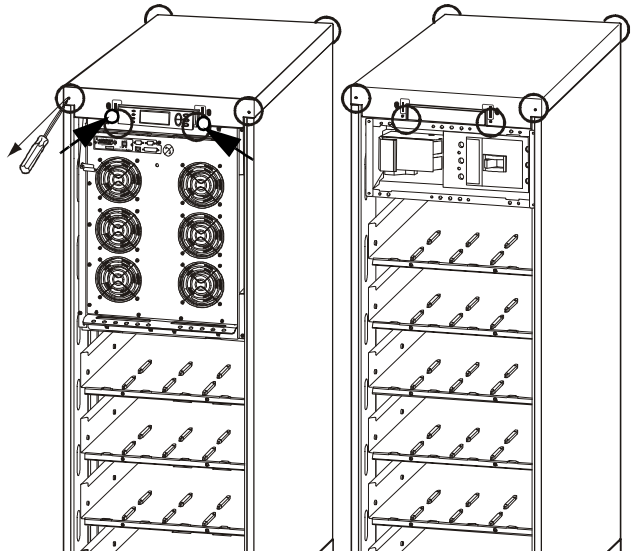


UPS front view

XR Battery Enclosure

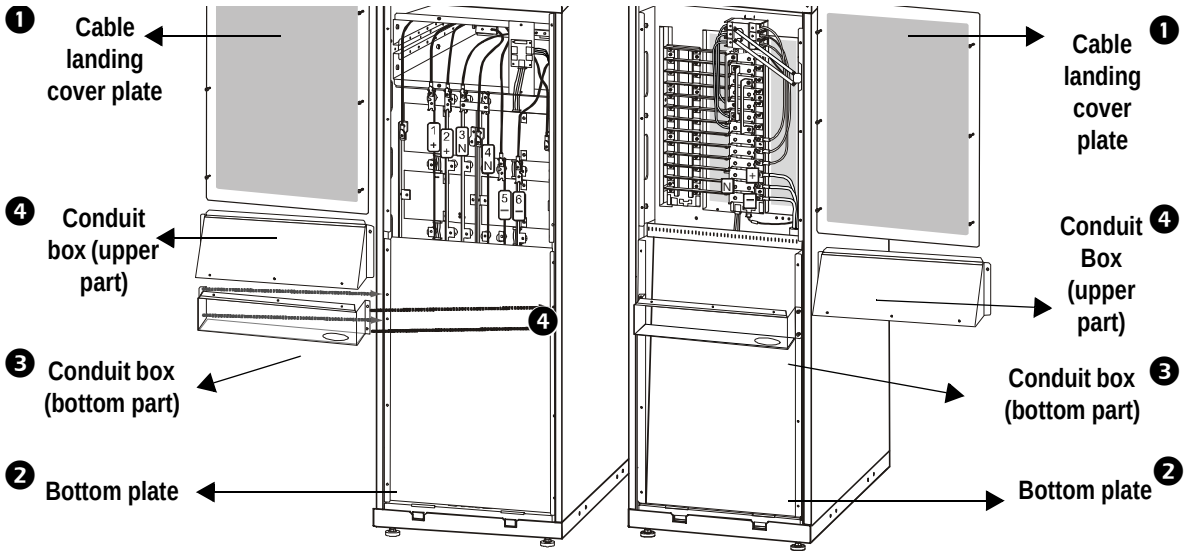
Remove the top cover

1. Loosen the six screws of the top cover (four at the front and two at the back).
2. Lift up from the back and push forward to free the cover.



Remove the cable landing cover and bottom plates

To access the cable landing area in the UPS and the XR Battery Enclosure(s), follow this procedure:



1. Loosen the six M4 screws from the cable landing cover plate on the UPS and the XR Battery Enclosure(s) and then remove the plates.
2. Remove the screws from the bottom plate on the UPS and the XR Battery Enclosure(s) and then remove the plates.
3. Punch holes in the bottom of the conduit boxes (optional for 380/400/415 V) to fit the size of the conduit pipes.

Note: The conduit box is not included in 380/400/415 V versions, but can be purchased (SUVTOPT001: 10-20 kVA UPS, SUVTOPT002: 10-40 kVA UPS plus XR Battery Enclosure).

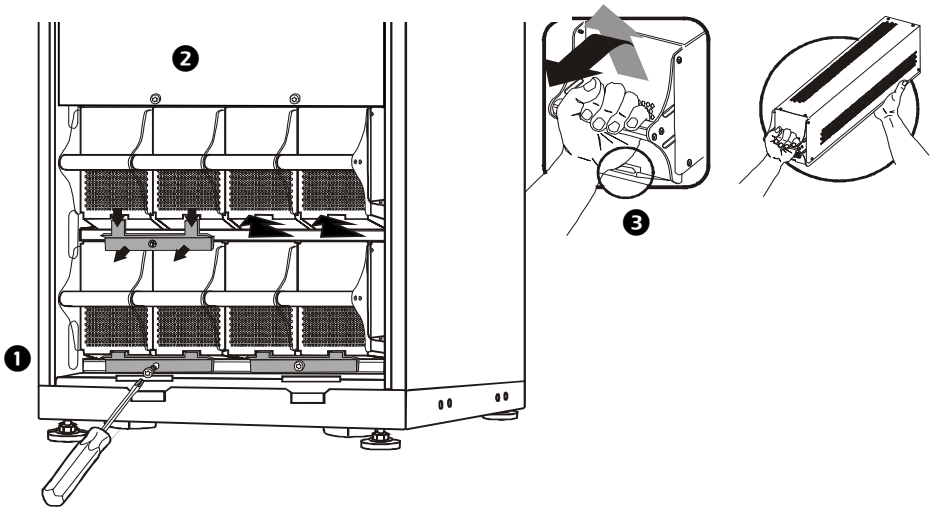
4. Attach the bottom part of the conduit boxes to the back of the UPS and the back of the XR Battery Enclosure, respectively with four screws each (if applicable). The bottom part of the conduit box is secured to the enclosure with four screws.

Remove the XR Battery Modules

Heavy: Use two people to lift the battery modules.

Note: The XR Battery Enclosures ship with two battery modules. All battery modules in the UPS and the XR Battery Enclosure(s) must be removed before interconnecting these enclosures.

Note: When you remove battery modules, start from the highest row and work down.



1. Remove all battery securing brackets (used to secure the batteries during transport) by removing the M6 Torx screws.
2. Remove the blind plate.
3. To release the battery from its lock mechanism, gently push the battery upwards and then pull it out while supporting the battery with your other hand.

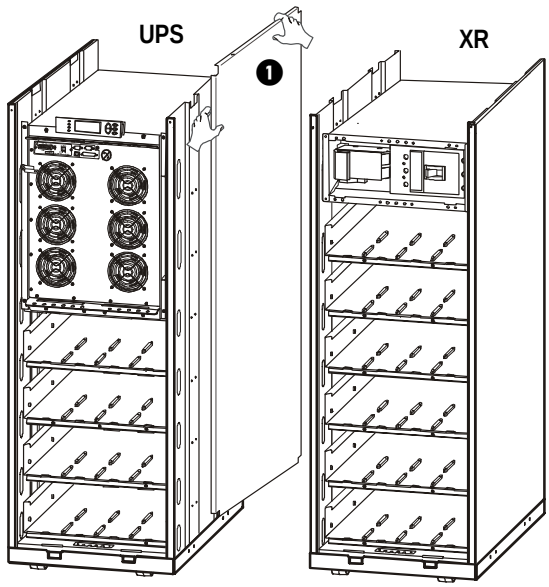
Anchor the UPS and additional XR Battery or UPS Enclosure(s) (optional)

Note: Enclosures can be kept apart or assembled and anchored with interconnection plates and brackets: G35TOPT004: 352 mm (13.85 in) UPS enclosure to XR enclosure, G35TOPT005: 523 mm (20.59 in) UPS enclosure to XR enclosure, or G35TOPT006: XR enclosure to XR enclosure.

Note: A baying kit includes three U-shaped floor anchoring brackets. In situations where a UPS or XR Battery Enclosure must be added to an existing configuration of two or more bayed together enclosures, only one of the U-shaped floor anchoring brackets is necessary. In those situations, please dispose of the two superfluous U-shaped floor anchoring brackets.

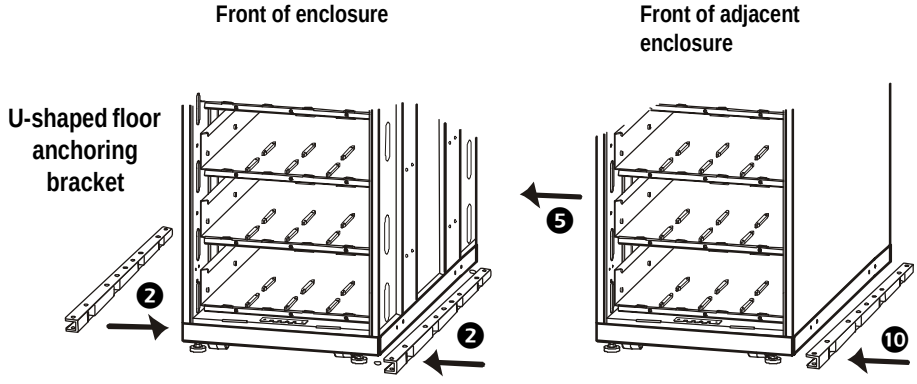
Note: The L-shaped floor anchoring brackets that secured the enclosure to the pallet during shipment may be used for a stand-alone UPS enclosure to enhance stability, but is not necessary when baying enclosures together. Instead, the three U-shaped floor anchoring brackets from the baying kit are used.

1. Remove the side panels from the enclosure(s) to get access to the holes in the bottom frame.



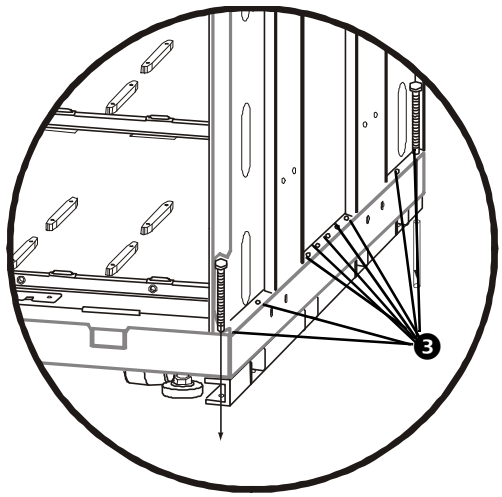
Note: Make sure that the enclosures are level to be able to anchor the enclosures to each other.

2. Position two U-shaped floor anchoring brackets under one enclosure; one in each side.



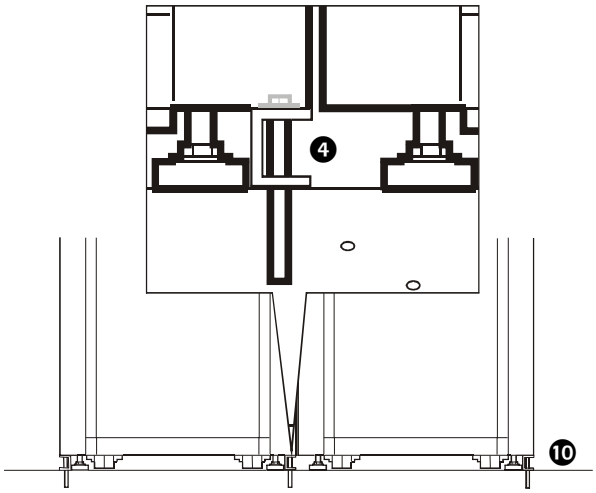
Note: The U-shaped interconnection brackets are 1-2 mm higher than the opening below the enclosure to inactivate the casters. Therefore, the enclosure must be tilted when placing the U-shaped interconnection brackets under the enclosure.

3. In each side of the same enclosure insert a maximum of nine and a minimum of two M8 screws (not provided) through holes in the bottom of the enclosure and through holes in the U-shaped floor anchoring brackets, and into the pre-drilled floor holes.



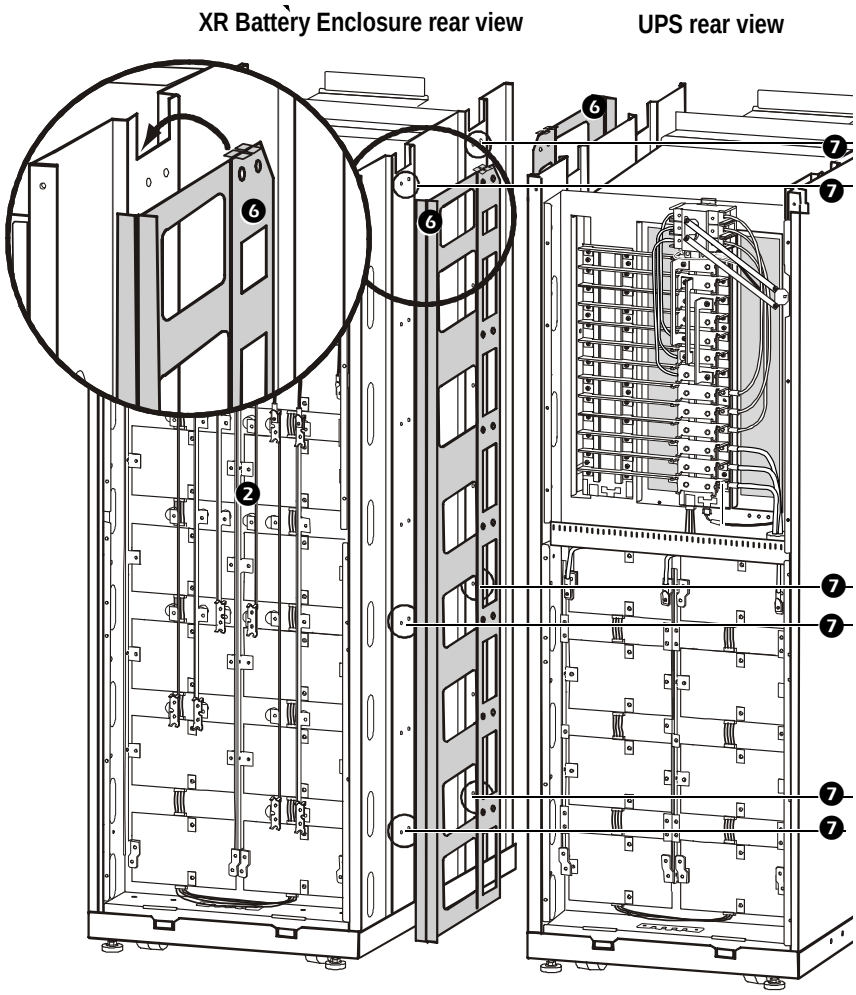
Note: See “Prepare for Floor-Anchoring (optional)” on page 2 if the floor has not been prepared for anchoring.

4. Fasten the screws.
5. Move the adjacent enclosure on its casters close to the enclosure with the U-shaped floor anchoring brackets.

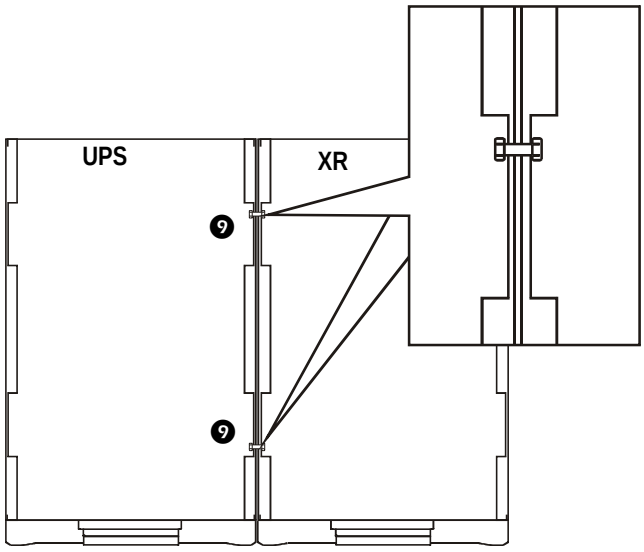


Note: If the additional enclosure is on its levelling feet, use a forklift or pallet jack to move it into position.

6. Insert the interconnection plates between the two enclosures. One is positioned toward the front and the other toward the rear. Note how the “wings” on the interconnection plates rest in slots at the top of the inner panel on the XR Battery Enclosure.
7. Align the two enclosures and level the three marked rows of bolt holes in one enclosure with the holes in the adjacent enclosure.



8. Push the two enclosures firmly together.
9. Bolt the two enclosures together by using the six M6x25 mm screws and nuts supplied in the kit: join one hole at the front and one hole at the rear of the enclosures on three levels.
10. Position the last and third U-shaped floor anchoring bracket under the adjacent enclosure (see previous graphics) and insert a minimum of two floor anchoring M8 screws (not provided) through holes in the bottom of the enclosure and through holes in the U-shaped floor anchoring bracket, and into the predrilled floor holes, and then fasten the screws.



Run the Cables

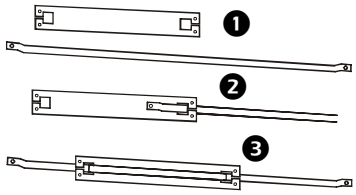
Connect Power in Installations with Busbars

Warning: Before carrying out the steps below, you must follow the Total Power Off procedure in the Operation Manual.

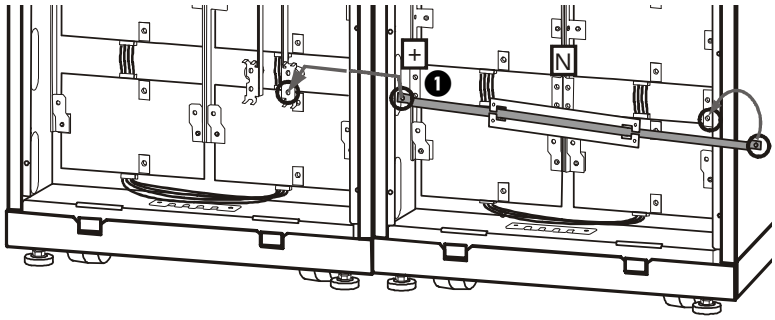
Install isolators

See *"Specifications" on page 23* for torque specification.

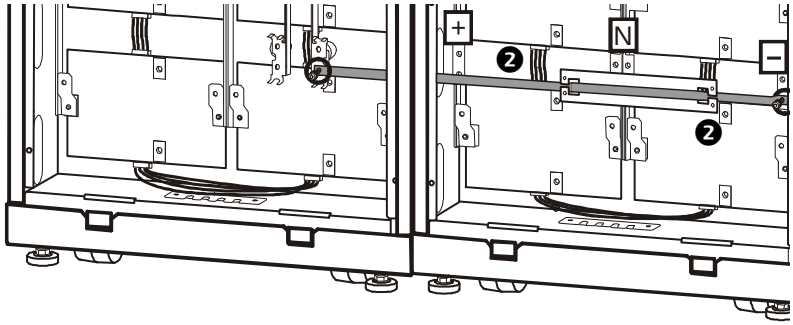
The isolators separate the baying kit busbar from the six vertical busbars in each XR Battery Enclosure, and the (+), N, and (-) busbars in the UPS. This is how the isolators are fitted to their busbar:



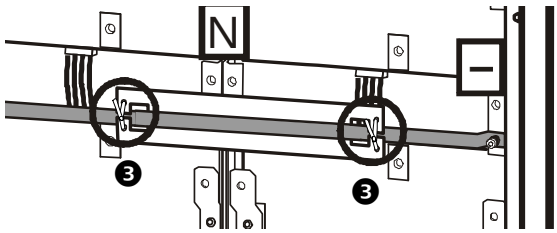
1. Guide the isolator busbar through the adjacent side panels.



2. Position the isolators across the vertical busbars (N in this example) and then fasten the isolator busbar by using the provided M5 Torx screws.

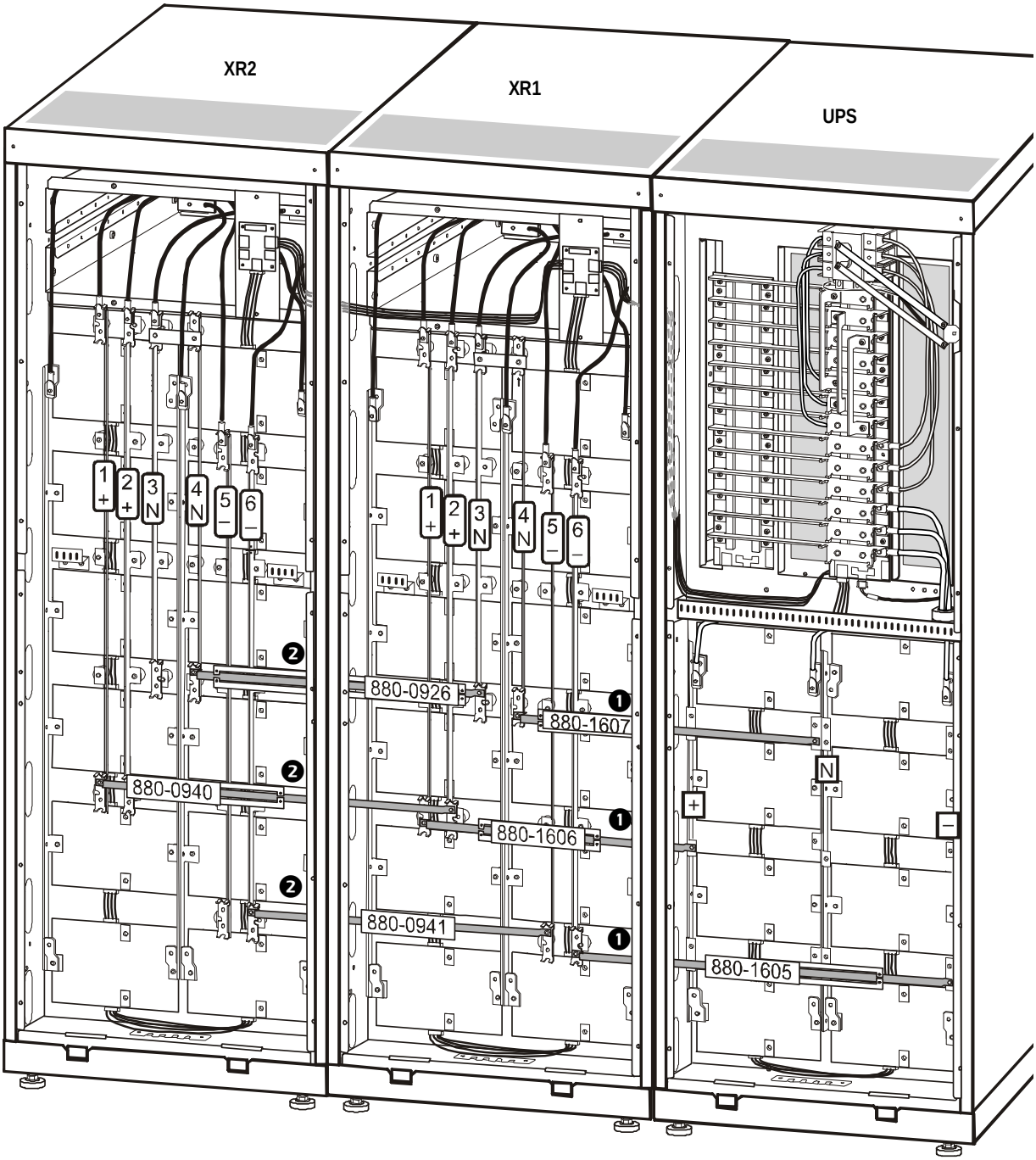


3. Secure the isolator to its busbar with cable ties.



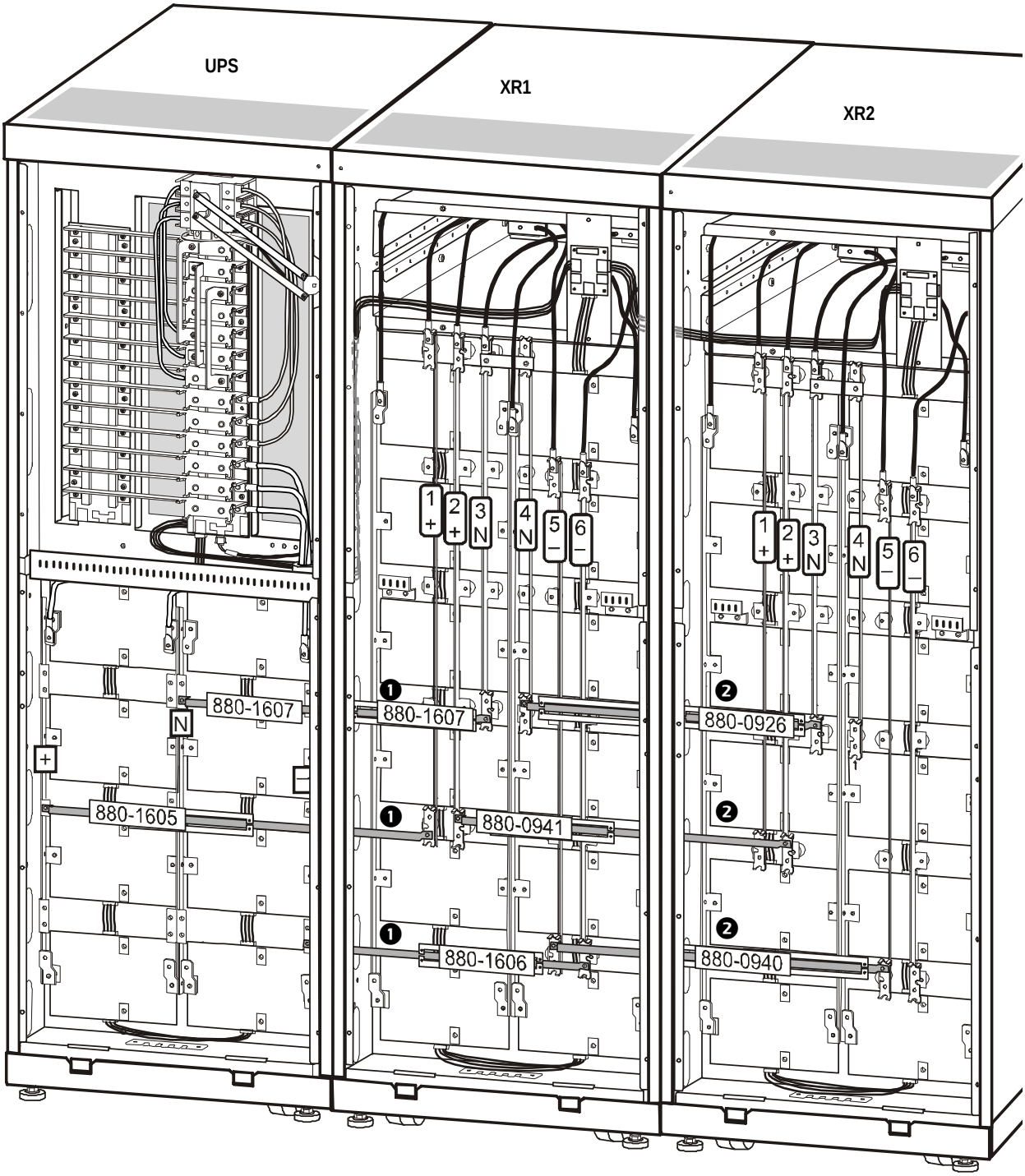
Install busbars

523 mm (20.59 in) UPS System with the UPS placed to the left (seen from the front).



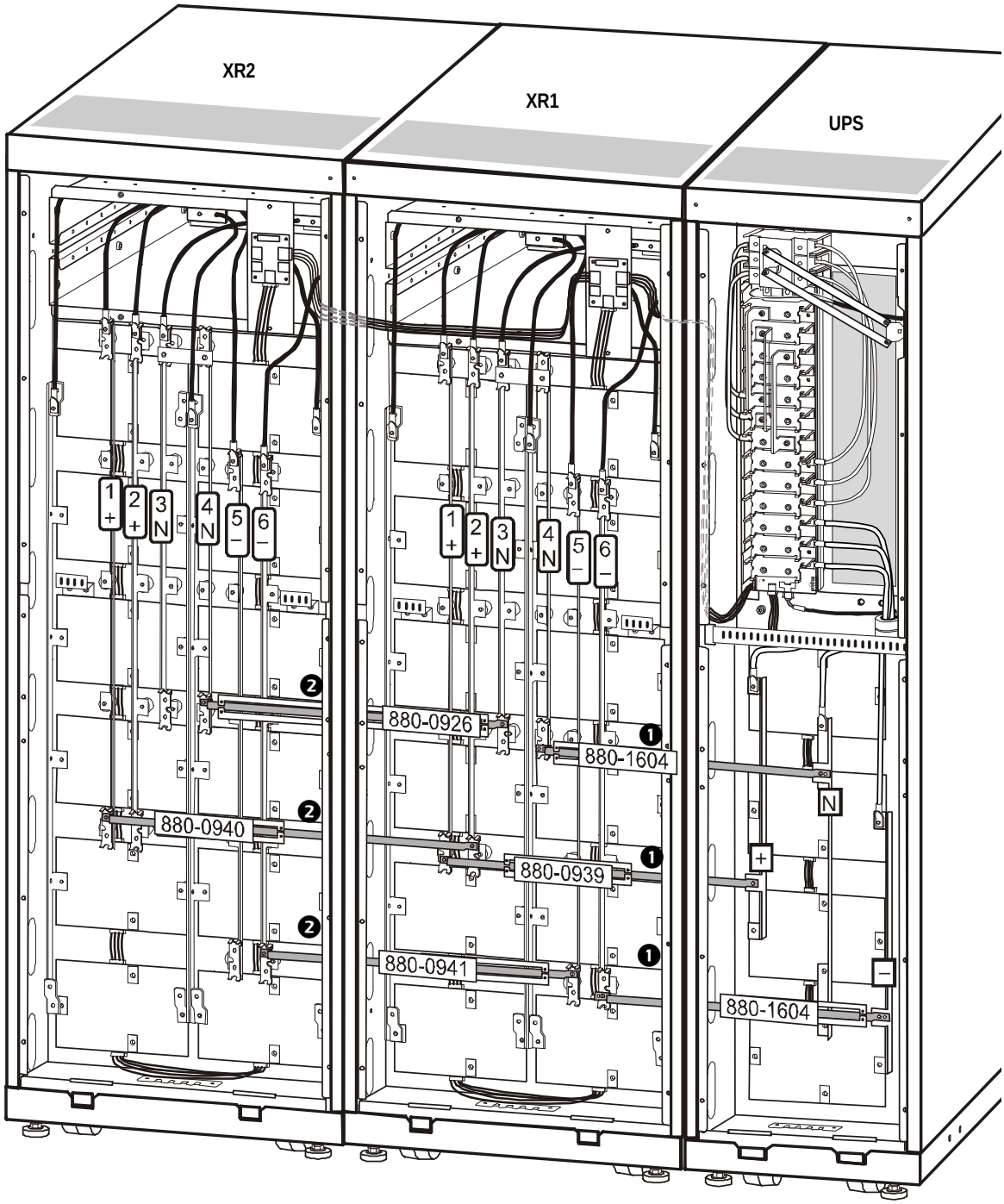
1. Install the following baying kit busbars between the UPS and XR1:
   880-1607 between the vertical busbar N on the UPS and busbar 4 on XR1
   880-1606 between the vertical busbar (+) on the UPS and busbar 1 on XR1
   880-1605 between busbar (-) on the UPS and busbar 6 on XR1
2. Install the following baying kit busbars between the two XR Battery Enclosures:
   880-0926 between the vertical busbar 3 on XR1 and busbar 4 on XR2
   880-0940 between the vertical busbar 2 on XR1 and busbar 1 on XR2
   880-0941 between the vertical busbar 5 on XR1 and busbar 6 on XR2

523 mm (20.59 in) UPS system with the UPS placed to the right (seen from the front).



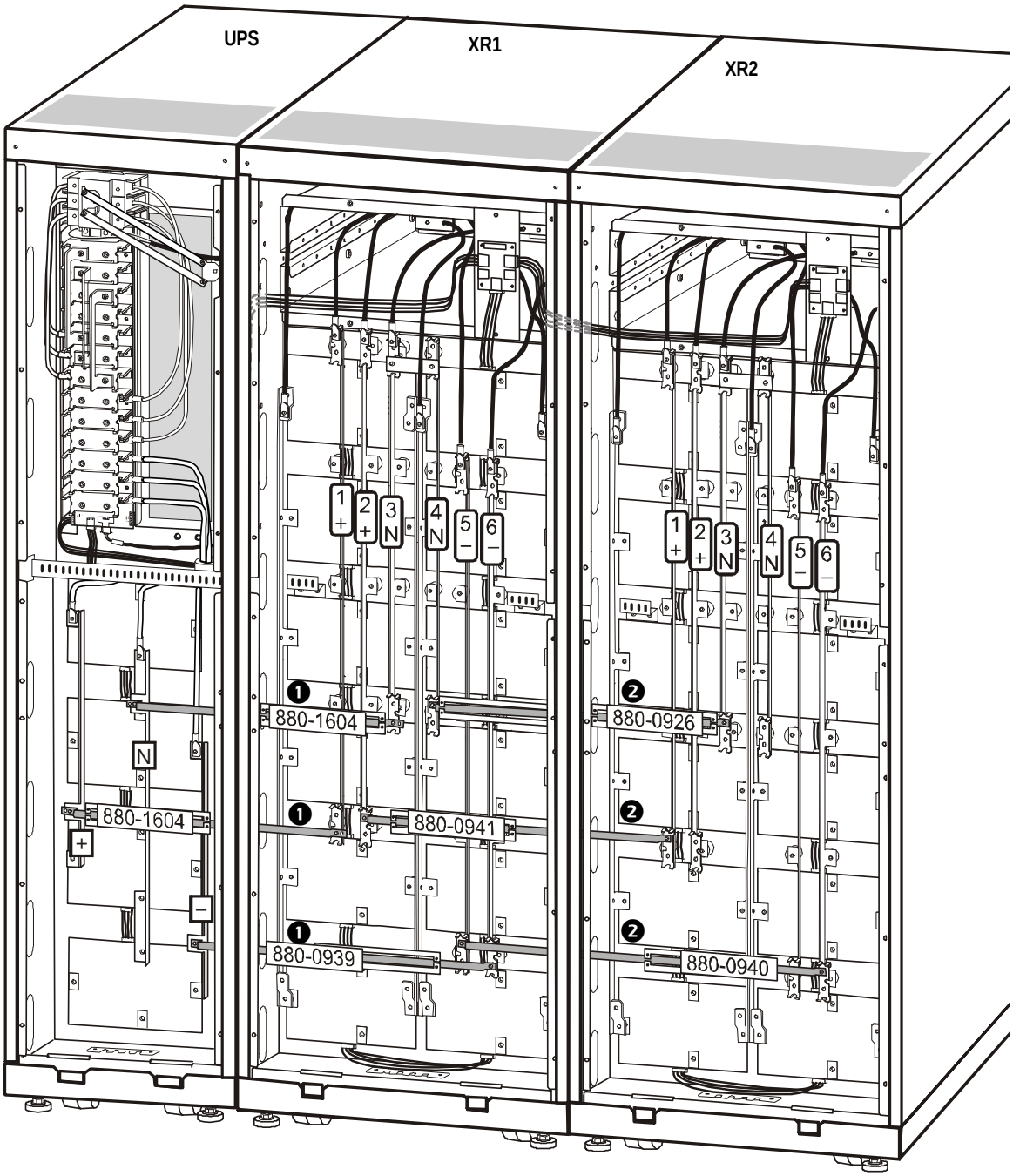
1. Install the following baying kit busbars between the UPS and XR1:
   880-1607 between the vertical busbar N on the UPS and busbar 3 on XR1
   880-1605 between vertical busbar (+) on the UPS and busbar 1 on XR1
   880-1606 between vertical busbar (-) on the UPS and busbar 6 on XR1
2. Install the following baying kit busbars between the two XR Battery Enclosures:
   880-0926 between the vertical busbar 4 on XR1 and vertical busbar 3 on XR2
   880-0941 between the vertical busbar 2 on XR 1 and vertical busbar 2 on XR2
   880-0940 between the vertical busbar 5 on XR1 and vertical busbar 5 on XR2

352 mm (13.85 in) UPS system with the UPS placed to the right (seen from the front).



1. Install the following baying kit busbars between the UPS and XR1:
   880-1604 between the vertical busbar N on the UPS and busbar 4 on XR1
   880-0939 between the vertical busbar (+) on the UPS and busbar 1 on XR1
   880-1604 between the vertical busbar (-) on the UPS and busbar 6 on XR1
2. Install the following baying kit busbars between two XR Battery Enclosures:
   880-0926 between the vertical busbar 3 on XR1 and busbar 4 on XR2
   880-0940 between the vertical busbar 2 on XR1 and busbar 1 on XR2
   880-0941 between the vertical busbar 5 on XR1 and busbar 6 on XR2

352 mm (13.85 in) UPS system with the UPS placed to the left (seen from the front).



1. Install the following baying kit busbars between the UPS and XR1:
   880-1604 between the vertical busbar N on the UPS and busbar 3 on XR1
   880-1604 between the vertical busbar (+) on the UPS and busbar 1 on XR1
   880-0939 between the vertical busbar (-) on the UPS and busbar 6 on XR1
2. Install the following baying kit busbars between two XR Battery Enclosures:
   880-0926 between the vertical busbar 4 on XR1 and vertical busbar 3 on XR2
   880-0941 between the vertical busbar 2 on XR1 and vertical busbar 1on XR2
   880-0940 between the vertical busbar 5 on XR1 and vertical busbar 6 on XR2

See *“Connect the EPO” on page 19*

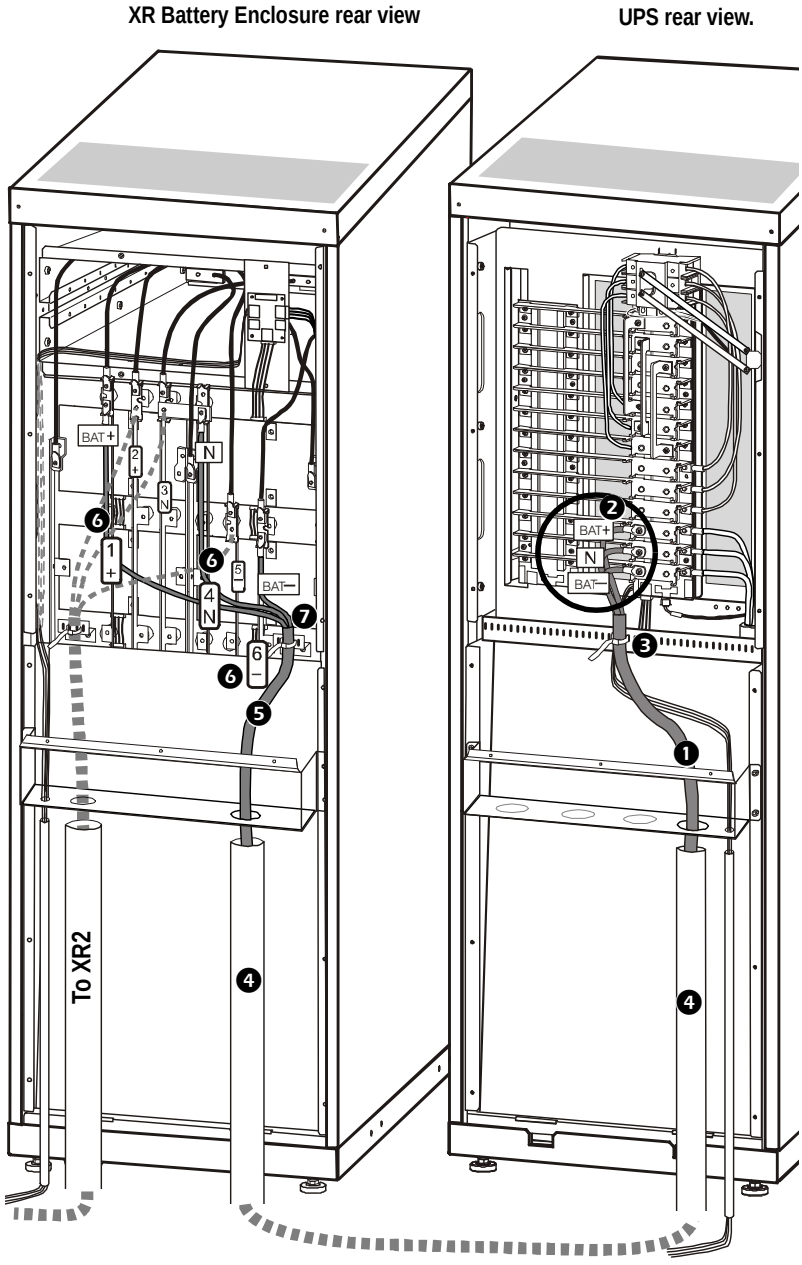
Connect Power in Installations with Cables

Install power cables

See *"Recommended cable sizes" on page 23.*

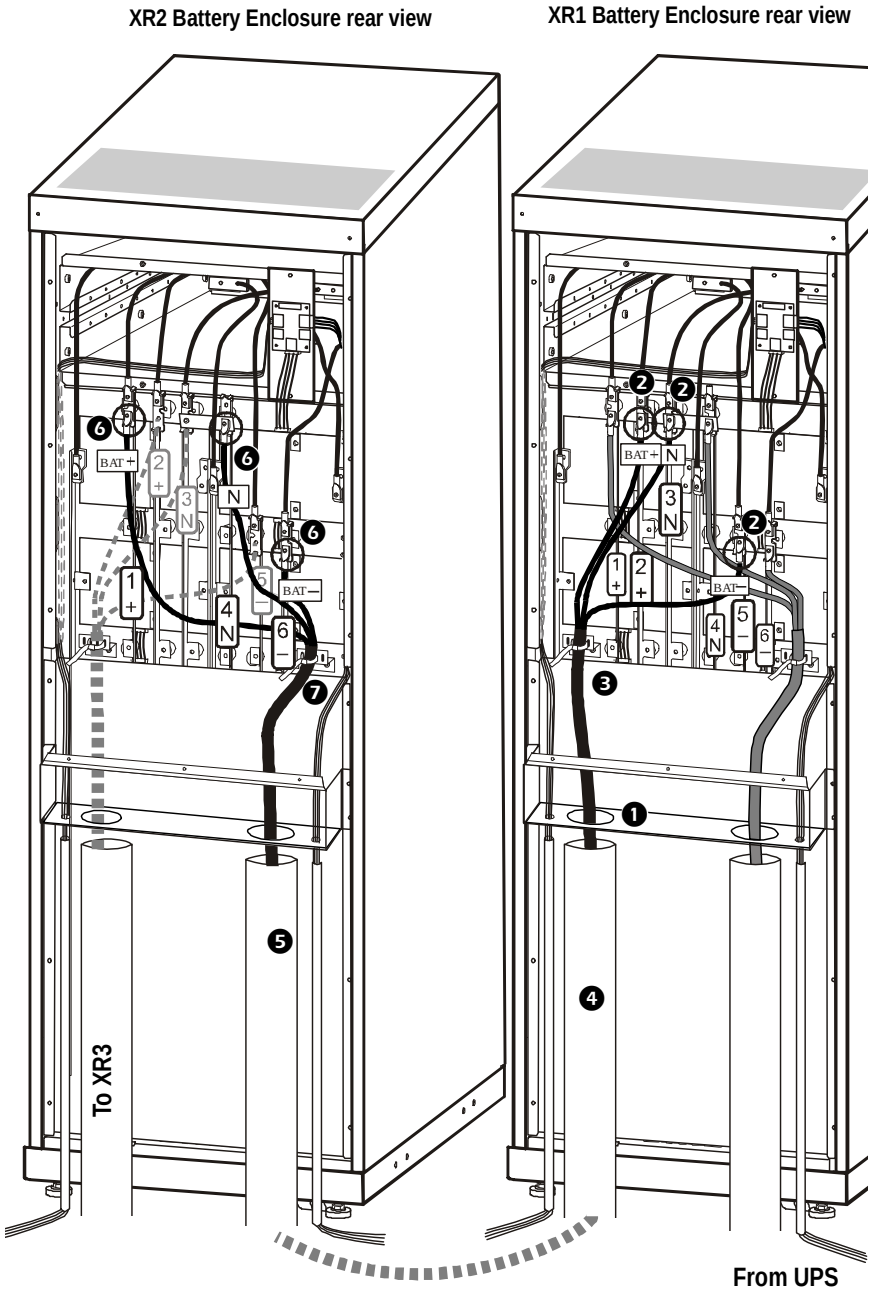
Install power cables between the UPS and the XR Battery Enclosure.

1. In the UPS, feed the cable up through the conduit box or through the transparent cable route bracket (not shown).
2. Connect the Bat+, Bat-, and N cables to the busbars in the UPS.
3. Secure the cables to the perforated bracket with cable ties.
4. Equip the cable with conduits (if applicable).
5. In the XR Battery Enclosure, feed the cable up through the conduit box (if applicable) to the cable landing area.
6. Connect the (+) cable to busbar no. 1 (+), connect the N cable to busbar no. 4 (N), and the (-) cable to busbar no. 6 (-).
7. Secure the cable to the perforated bracket with cable ties.
8. Attach the top part of the conduit box (if applicable).



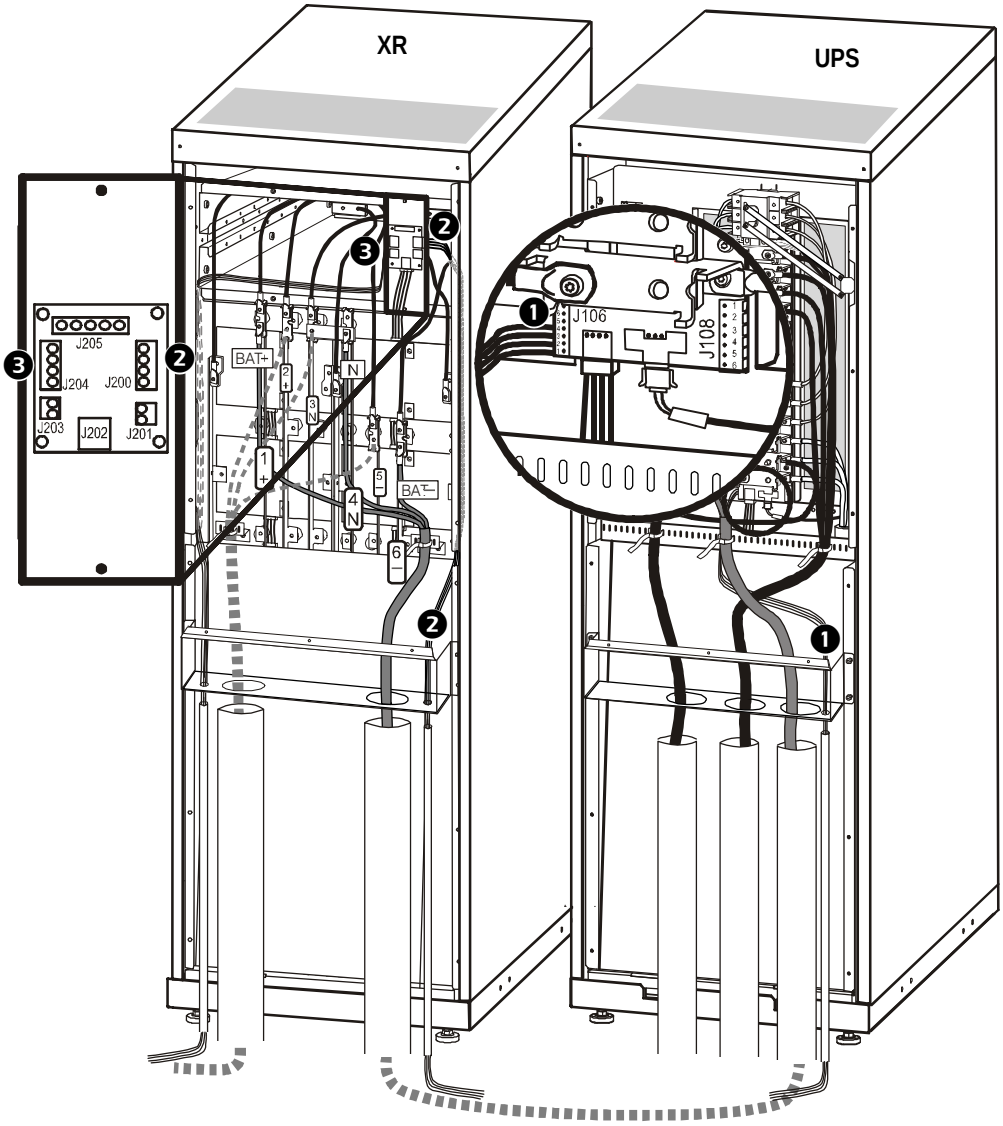
Install power cables between two XR Battery Enclosures.

1. Feed the cable up through the conduit box on XR1 or through the transparent cable route bracket (not shown) to the cable connection area.
2. Connect the (-) cable to busbar no. 5 (-), the N cable to busbar no. 3 (N), and the (+) cable to busbar no. 2 (+) in XR1.
3. Secure the cable to the perforated bracket with cable ties.
4. Equip the cable with conduits (if applicable).
5. Feed the cable up into the conduit box (optional for 400 V versions) on XR2.
6. Connect the (-) cable to busbar no. 6 (-), the N cable to busbar no. 4 (N), and the (+) cable to busbar no. 1 (+) in XR2.
7. Secure the cable to the perforated bracket with cable ties.
8. Attach the top part of the conduit box (if applicable).



Note: If you use floor anchoring, carry out the floor anchoring procedures now.

Connect Communication Cables

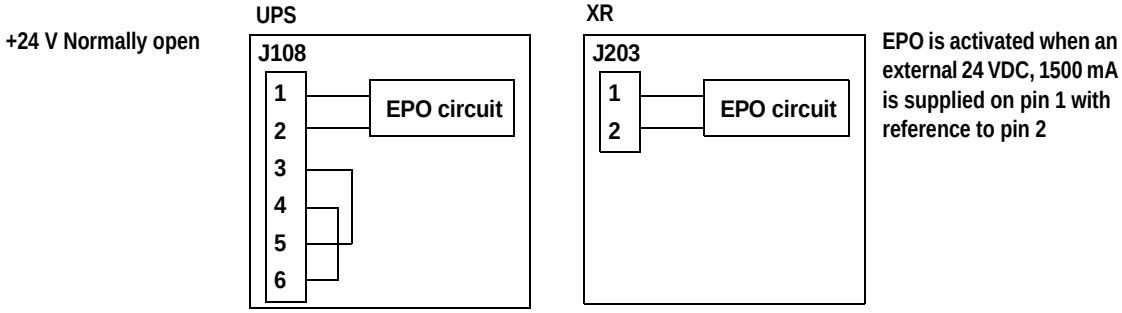


1. Feed the cable from pin connection J106 in the UPS down through the conduit (if appliccable).
2. Run the cable up into the XR conduit and connect it to pin connection J200 in the XR Battery Enclosure.
3. If you use an XR2, run the cable from pin connection J204 in XR1 to pin connection J200 in XR2.

Connect the EPO

Connect the EPO to the UPS and the XR Battery Enclosure

1. Connect the EPO (Emergency Power Off) to J108 in the UPS and to J203 in the XR Battery Enclosure by guiding the cable through conduits.
2. Connect the EPO by using this configuration:



See *"EPO requirements" on page 23*.

Final Mechanical Assembly

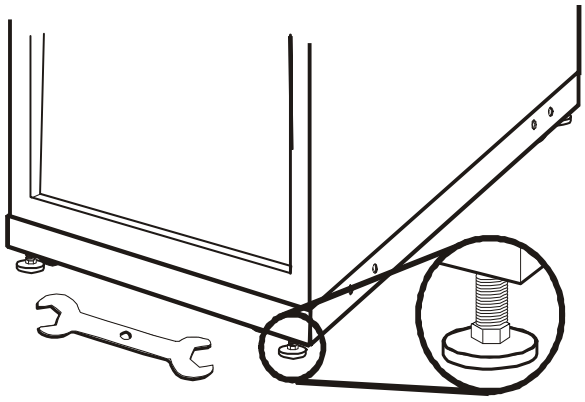
Level the Enclosures (L-shaped Floor Anchoring Brackets) and Install Batteries

Note: The leveling feet and the L-shaped floor anchoring bracets (reuse of transportation brackets) are used in some configurations instead of the optional U-shaped floor anchoring brackets described earlier in this manual.

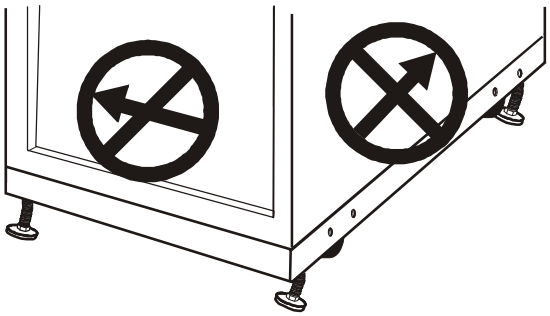
Note: Verify that the installation has been electrically wired before setting the leveling feet.

Level the enclosures

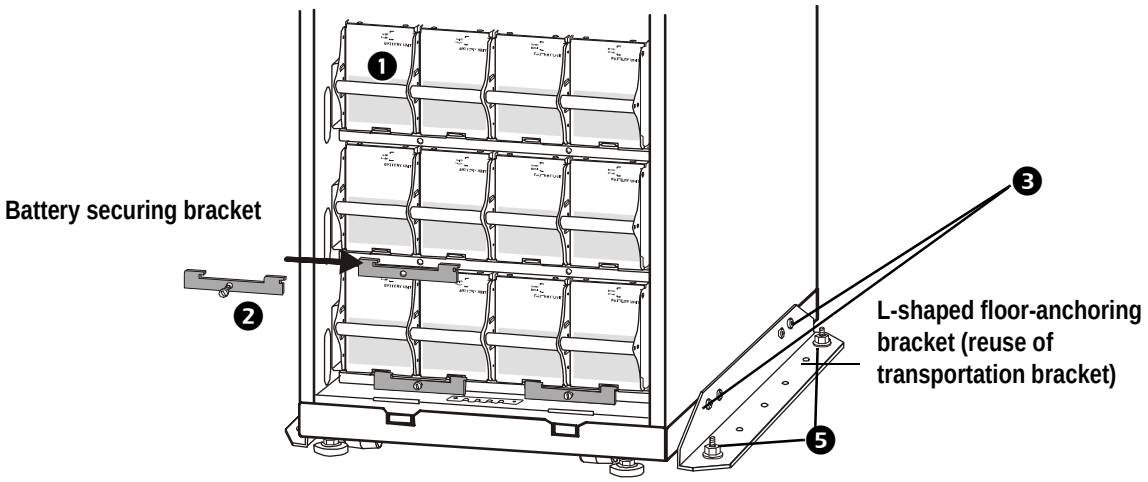
Set the leveling feet to ensure that the UPS is completely horizontal when it is in its final operating position. Use the wrench shipped with the UPS to adjust all four leveling feet from the front to the back, and from the left to the right, until the pads make solid contact with the floor. Use a bubble level to check that the enclosure is horizontal.



Caution: To avoid equipment damage, do not push or pull the UPS after the leveling feet have been lowered.



Install battery-securing and floor-anchoring brackets



1. Install the batteries by pushing them all the way into the enclosure.
2. If required, install the battery securing brackets to hold the batteries firmly in place. Note! Do not install the bracket the same way they were positioned when the enclosure arrived. Rotate the brackets 180º and reinstall.

Note: Battery securing brackets are delivered with the UPS or XR Battery Enclosure and installed in front of the batteries. Extra battery securing brackets for additional batteries can be purchased. Refer to kit SUVTOPT003: APC Smart-UPS VT Battery Lock Kit for one Battery Module.

3. Install the L-shaped floor-anchoring bracket (reuse of transportation brackets) by adding four M6 screws and nuts (provided) to the enclosure (only if the optional U-shaped floor anchoring brackets described in this manual have not been chosen).
4. Drill floor holes.

Note: If the floor has not been prepared for anchoring, see “Prepare for Floor-Anchoring (optional)” on page 2.

5. Add a minimum of two M8 screws (not provided) to the anchoring bracket and tighten the screws.

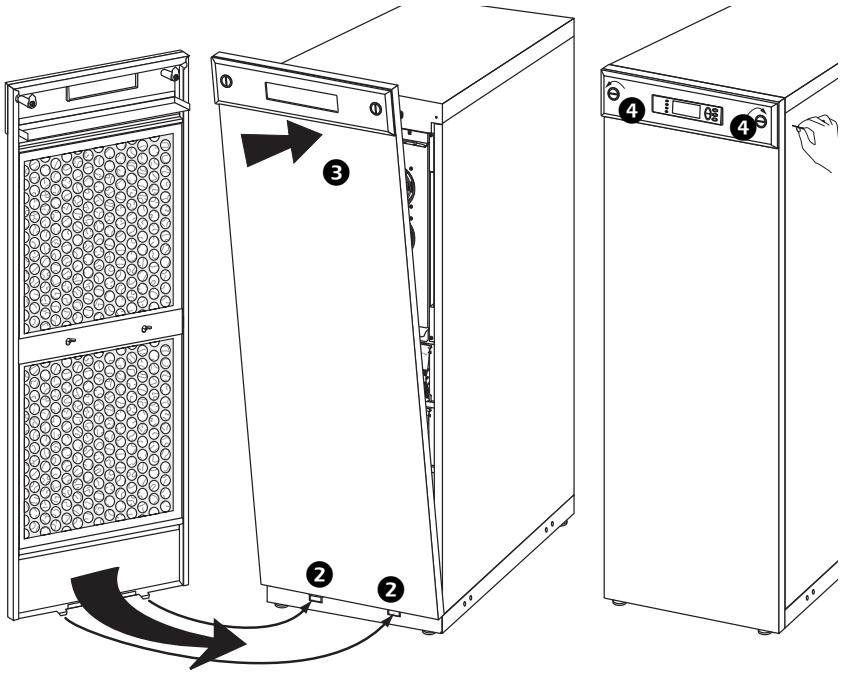
Reinstall the Enclosure Plates

Reinstall the cable landing cover plates and the bottom plates

1. Reinstall the cable landing cover plates on the XR Battery Enclosure(s)
2. Install the upper part of the conduit box (if applicable) on all enclosures.
3. Reinstall the bottom plates on the UPS and the XR Battery Enclosure(s).

Reinstall the top cover and the front panel

1. Reinstall the top cover by fastening the four screws at the front and the two screws at the back.
2. Insert the two taps at the bottom of the front panel into the two slots at the bottom of the enclosure.
3. Push the front panel forward until it engages the locking devices at the top of the enclosure.
4. Use a screwdriver to set the lock mechanism to the locked position.



Specifications

Battery voltage and current

XR Battery Enclosure	30 kVA	40 kVA
Battery voltage (nominal)	± 192 VDC	± 192 VDC
Battery current (at full load)	69.4 A at ± 192 V	87.9A at ± 192V
Max. current (at end of discharge)	86.6 A at ± 154 V	110.1A at ± 154V
If the XR Battery Enclosure is customer-supplied, please refer to product-specific data.		

Recommended cable sizes

North America	Europe, Middle East, Asia
208/220 V	**380/400/415 V**
BAT+, N, BAT- 35mm^2 1 AWG 167º F (75º C) copper wire	BAT+, N, BAT- 50 mm^2 75º C (167º F) copper wire

Note: Power terminal lug diameter: minimum 6 mm (0.2 in).
Torque value: 45 lbf-in/7 Nm.

Note: Use Molex lug type or equivalent, and follow the manufacturer's specifications.

EPO requirements

SELV voltage	24 VDC
Current:	1500 mA

Torque specification

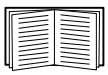
Torque specification: Isolators: M5 7 Nm (45 lbf-in).

Post-Installation Checklist

Use the following checklist to verify that the XR Battery Enclosure has been installed correctly:

❑	Ensure that all busbars/cables between the XR Battery Enclosure(s) and the UPS are correctly installed.
❑	Ensure that the DC breaker (if available) in the Battery Enclosure is in the OFF or STAND-BY position.
❑	Install the enclosure plates.

Note: If a problem occurs, call Customer Support (see the back cover).



See also the Operation Manual located in the documentation storage area behind the front panel of the UPS and XR Battery Enclosure(s).

APC Worldwide Customer Support

Customer support for this or any other APC product is available at no charge in any of the following ways:

- Visit the APC Web site to access documents in the APC Knowledge Base and to submit customer support requests.
  - **www.apc.com** (Corporate Headquarters)
    Connect to localized APC Web sites for specific countries, each of which provides customer support information.
  - **www.apc.com/support/**
    Global support searching APC Knowledge Base and using e-support.
- Contact the APC Customer Support Center by telephone or e-mail.
  - Local, country-specific centers: go to **www.apc.com/support/contact** for contact information.

For information on how to obtain local customer support, contact the APC representative or other distributors from whom you purchased your APC product.

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